

Nordic AI Meet 2026

O3. Human-Centred AI in Health & Welfare (Wed 13:00-14:00)

3. How Is AI Personalizing Medicine? Examining Ethics and Knowledge Practices in Data-Driven Personalization

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Abstract: AI-supported prediction medicine promises more targeted prevention, earlier disease detection, improved treatment decisions and more accurate prognoses. In Sweden, these developments are linked to ambitions for a broad and equitable implementation of precision medicine. In our research, we investigate a central tension: while AI is often presented as enabling highly personalized care, prediction models are based on data from previous patients and population-level patterns. Individuals are therefore understood through information inherited from groups. This raises important ethical and epistemological questions concerning representation, bias, fairness and the relationship between individual uniqueness and collective data.

In this interdisciplinary project, combining the social sciences and data-driven medicine, we examine ideas and practices regarding AI-supported medical personalization. Three main research questions guide the work. First, how does AI-driven prediction align with ideas of individual uniqueness? Second, what tensions emerge between personalization, person-centered care and group-based data-driven technologies? Third, what role will cohort-based medical knowledge play in the future as AI becomes more influential in healthcare decision-making?

Empirically, we focus on two contrasting cases: breast cancer and heart failure. Using a qualitative case-study approach, the project combines interviews, observations and document analysis. Participants include researchers, AI developers, clinicians and representatives of patient organizations. By examining both laboratory and clinical settings, the study explores ideas and practices of how AI prediction tools for increased personalization are developed, implemented and understood in practice.

Early insights point to three key themes. First, there are various notions of what personalization is and whether it offers more individualized treatment, stressing the dependency on stratifications and the design choices in determining different risk groups and categories. Second, high expectations for AI create ethical challenges related to equal access, fairness and the redistribution of healthcare resources, particularly when existing services are already unevenly available. Third, AI appears to be contributing to a broader transition in medical knowledge-making, moving attention from traditional cohorts toward more individualized forms of understanding while remaining dependent on collective datasets and insufficient data practices. The project aims to produce knowledge that supports ethical AI implementation in healthcare, strengthens interdisciplinary dialogue, informs policy debates and advances discussions about the future of medical knowledge-making in an era of data-driven prediction medicine.